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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/683,727	10/10/2003	Arthur Sherman	ASMMC.9CPIDVICI	1627	
20995 7590 07/26/2007 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR			EXAM	EXAMINER ·	
			STOUFFER, KELLY M		
IRVINE, CA 92614			ART UNIT	PAPER NUMBER	
,					
			NOTIFICATION DATE	DELIVERY MODE	
			07/26/2007	ELECTRONIC	

# Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com eOAPilot@kmob.com

		Application No.	Applicant(s)			
		10/683,727	SHERMAN, ARTHUR			
Offic	e Action Summary	Examiner	Art Unit			
	·	Kelly Stouffer	1762			
The MA	ILING DATE of this communication app	ears on the cover sheet with the c	orrespondence address			
WHICHEVER I - Extensions of time after SIX (6) MONT - If NO period for rep - Failure to reply with Any reply received	D STATUTORY PERIOD FOR REPLY S LONGER, FROM THE MAILING DA may be available under the provisions of 37 CFR 1.13 THS from the mailing date of this communication. oly is specified above, the maximum statutory period whin the set or extended period for reply will, by statute, by the Office later than three months after the mailing an adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 6(a). In no event, however, may a reply be timil apply and will expire SIX (6) MONTHS from cause the application to become ABANDONE	N. nely filed the mailing date of this communication. D (35 U.S.C. § 133).			
Status						
1)⊠ Respons	ive to communication(s) filed on 08 Ju	ne 2007.				
2a) ☐ This action	on is <b>FINAL</b> . 2b)⊠ This	action is non-final.	•			
	3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is					
closed in	accordance with the practice under E	x parte Quayle, 1935 C.D. 11, 45	53 O.G. 213.			
Disposition of Cla	ims	•	•			
4)⊠ Claim(s)	1-4 and 18-20 is/are pending in the ap	plication.	·			
	above claim(s) is/are withdraw	•				
	is/are allowed.					
6)⊠ Claim(s)	<u>1-4 and 18-20</u> is/are rejected.					
7) Claim(s)	is/are objected to.	•				
8) Claim(s)	are subject to restriction and/or	election requirement.				
Application Paper	rs					
9)∏ The speci	fication is objected to by the Examiner					
•	ing(s) filed on is/are: a)□ acce	•	Examiner.			
	may not request that any objection to the					
	ent drawing sheet(s) including the correction		• •			
11)∐ The oath o	or declaration is objected to by the Exa	aminer. Note the attached Office	Action or form PTO-152.			
Priority under 35 l	J.S.C. § 119	·	,			
	•	oriority under 35 U.S.C. \$ 440(a)	(d) or (f)			
	12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of:					
1. Certified copies of the priority documents have been received.						
Certified copies of the priority documents have been received in Application No						
3. Copies of the certified copies of the priority documents have been received in this National Stage						
арр	olication from the International Bureau	(PCT Rule 17.2(a)).				
* See the attached detailed Office action for a list of the certified copies not received.						
			•			
	•					
Attachment(s)		·				
1) Notice of Referen		4) Interview Summary	(PTO-413)			
2) Notice of Draftspe	erson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Da	te			
3) 🔀 Information Disclo	osure Statement(s) (PTO/SB/08) Date <u>6/22/07</u> .	5)  Notice of Informal Pa	elent Application .			

Art Unit: 1762

### **DETAILED ACTION**

#### Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8 June 2007 has been entered.

## Response to Arguments

2. Applicant's arguments filed 8 June 2007 have been considered but are most in view of the new ground(s) of rejection.

### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Application/Control Number: 10/683,727 Page 3

Art Unit: 1762

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-4 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dillon et al. (Surface Science 322(1995) 230-242) in view of US Patent number 4985313 to Penneck et al.

Regarding claims 1 and 18, Dillon et al. (in the abstract, among several other places in the document) discloses a process for growing aluminum oxide on a substrate in a single reaction chamber by a sequential chemical vapor deposition or an ABAB process comprising a plurality of cycles with each cycle comprising exposing the substrate to gaseous trimethyl aluminum, stopping the flow of gaseous trimethyl aluminum which is consistently removed from the chamber by a vacuum pump, exposing the substrate to an oxygen source which is consistently removed from the chamber by a vacuum pump and forming an aluminum oxide film of approximately 0.22 mL per AB cycle (p241, column 1). Dillon et al. does not teach using oxygen plasma as the oxygen source rather than water vapor but it is clear from the document that a layer free of contaminants is of importance to the study disclosed. Penneck et al. teaches using trimethyl aluminum as a precursor in column 14 lines 9-35 and then using an oxygen plasma, or atomic oxygen, to form a coating of the aluminum oxide (column 11 lines 1-18) in order to form a layer free of contaminants that would normally occur during wet deposition processes (columns 7 and 8 lines 59-21).

Application/Control Number: 10/683,727

Art Unit: 1762

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dillon et al. to include using an oxygen plasma as an oxygen source alternating with the aluminum source as taught by Penneck et al. in order to form a layer free of contaminants that would normally occur during wet deposition processes.

Regarding claim 2, Dillon et al. discloses that the thickness of an aluminum oxide layer after each cycle depends upon the amount of amorphous aluminum oxide present and the reaction mechanism (see pages 239-241 et seq.) Therefore, the variable of aluminum oxide layer thickness is modified by routine experimentation and is not inventive.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dillon et al. to include a layer thickness of aluminum oxide as 3 A by routine experimentation depending upon the application of the layer absent evidence showing a criticality for the claimed value.

Regarding claims 3 and 19, Penneck et al. discloses that the plasma may be generated and used in a commercially available plasma oxidation unit in column 11 lines 1-7. A remote plasma generator would have been available to Penneck et al., or at least to those at the time of the invention. See, for example, US patents 4882008, 4949671, etc.

Art Unit: 1762

Regarding claims 4 and 20 that require room temperature, Dillon et al. cites a temperature of 300 K (p 232), which may be considered room temperature at least as broadly as it is described in the claims. Dillon et al. also modify this variable throughout the document to achieve different results due to reaction thermodynamics and reaction kinetics. Therefore, it also would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dillon et al. to include a reaction temperature at room temperature absent evidence showing a criticality for room temperature.

#### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly Stouffer whose telephone number is (571) 272-2668. The examiner can normally be reached on Monday - Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1762

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kelly Stouffer Examiner Art Unit 1762

kms

TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER